

CLAIMS

We claim:

- 5 1. A recombinant nucleic acid comprising a nucleotide sequence selected from the group consisting of the sequences outlined in Tables 1-112.
2. A host cell comprising the recombinant nucleic acid of claim 1.
- 10 3. An expression vector comprising the recombinant nucleic acid according to claim 2.
4. A host cell comprising the expression vector of claim 3.
- 15 5. A recombinant protein comprising an amino acid sequence encoded by a nucleic acid sequence comprising a sequence selected from the group consisting of the sequences outlined in Tables 1-112.
- 20 6. A method of screening drug candidates comprising:
 - a) providing a cell that expresses a carcinoma associated (CA) gene comprising a nucleic acid sequence selected from the group consisting of the sequences outlined in Tables 1-112 or fragment thereof;
 - b) adding a drug candidate to said cell; and
 - c) determining the effect of said drug candidate on the expression of said CA gene.
- 25 7. A method according to claim 6 wherein said determining comprises comparing the level of expression in the absence of said drug candidate to the level of expression in the presence of said drug candidate.
- 30 8. A method of screening for a bioactive agent capable of binding to an CA protein (CAP), wherein said CAP is encoded by a nucleic acid comprising a nucleic acid sequence selected from the group consisting of the sequences outlined in Tables 1-112, said method comprising:
 - a) combining said CAP and a candidate bioactive agent; and
 - b) determining the binding of said candidate agent to said CAP.
- 35 9. A method for screening for a bioactive agent capable of modulating the activity of an CA protein (CAP), wherein said CAP is encoded by a nucleic acid comprising a nucleic acid sequence selected from the group consisting of the sequences outlined in Tables 1-112, said method comprising:

- a) combining said CAP and a candidate bioactive agent; and
- b) determining the effect of said candidate agent on the bioactivity of said CAP.

5 10. A method of evaluating the effect of a candidate carcinoma drug comprising:
 a) administering said drug to a patient;
 b) removing a cell sample from said patient; and
 c) determining alterations in the expression or activation of a gene comprising a
 nucleic acid sequence selected from the group consisting of the sequences outlined in Tables
10 1-112.

 11. A method of diagnosing carcinoma comprising:
 a) determining the expression of one or more genes comprising a nucleic acid
 sequence selected from the group consisting of the sequences outlined in Tables 1-112, in a
 first tissue type of a first individual; and
15 b) comparing said expression of said gene(s) from a second normal tissue type from
 said first individual or a second unaffected individual;
 wherein a difference in said expression indicates that the first individual has carcinoma.

 12. A method for inhibiting the activity of a CA protein (CAP), wherein said CAP is
20 encoded by a nucleic acid comprising a nucleic acid sequence selected from the group
 consisting of the sequences outlined in Tables 1-112, said method comprising binding an
 inhibitor to said CAP.

 13. A method of treating carcinomas comprising administering to a patient an inhibitor of
25 an CA protein (CAP), wherein said CAP is encoded by a nucleic acid comprising a nucleic
 acid sequence selected from the group consisting of the sequences outlined in Tables 1-112.

 14. A method of neutralizing the effect of an CA protein (CAP), wherein said CAP is
30 encoded by a nucleic acid comprising a nucleic acid sequence selected from the group
 consisting of the sequences outlined in Tables 1-112, comprising contacting an agent specific
 for said CAP protein with said CAP protein in an amount sufficient to effect neutralization.

 15. A polypeptide which specifically binds to a protein encoded by a nucleic acid
35 comprising a nucleic acid selected from the group consisting of the sequences outlined in
 Tables 1-112.

 16. A polypeptide according to claim 15 comprising an antibody which specifically binds
 to a protein encoded by a nucleic acid comprising a nucleic acid sequence selected from the
 group consisting of the sequences outlined in Tables 1-112.

17. A biochip comprising one or more nucleic acid segments selected from the group consisting of a nucleic acid of the sequences outlined in Tables 1-112 or fragments thereof.

5 18. A method of diagnosing carcinoma or a propensity to carcinoma by sequencing at least one CA gene of an individual.

19. A method of determining CA gene copy number comprising adding an CA gene probe to a sample of genomic DNA from an individual under conditions suitable for hybridization.

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